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ENGINEERING DATA TRANSMITTAL

Page 1 of 1

1. EDT 623667

2. To: (Receiving Organization)	3. From: (Originating Organization)	4. Related EDT No.:
Distribution	Replacement Cross-Site Transfer System	N/A
5. Proj./Prog./Dept./Div.:	**6. Design Authority/ Design Agent/Cog. Engr.:**	**7. Purchase Order No.:**
W-058/Startup	GL Parsons	N/A
8. Originator Remarks:		**9. Equip./Component No.:**
For Release		N/A
		10. System/Bldg./Facility:
11. Receiver Remarks: 11A. Design Baseline Document? [ ] Yes [X] No		**12. Major Assm. Dwg. No.:**
		13. Permit/Permit Application No.: N/A
		14. Required Response Date: N/A

15. DATA TRANSMITTED

(A) Item No.	(B) Document/Drawing No.	(C) Sheet No.	(D) Rev. No.	(E) Title or Description of Data Transmitted	(F) Approval Designator	(G) Reason for Transmittal	(H) Originator Disposition	(I) Receiver Disposition
1	HNF-2347		0	Preoperational Test POTP-008, MCS Loss of Power and Redundant Sump Leak Detector/PSH-3113 & PSH-3113A Interlock Test	SQ	1	1	

16. KEY

Approval Designator (F)	Reason for Transmittal (G)	Disposition (H) & (I)
E, S, Q, D or N/A (see WHC-CM-3-5, Sec.12.7)	1. Approval 4. Review 2. Release 5. Post-Review 3. Information 6. Dist. (Receipt Acknow. Required)	1. Approved 4. Reviewed no/comment 2. Approved w/comment 5. Reviewed w/comment 3. Disapproved w/comment 6. Receipt acknowledged

17. SIGNATURE/DISTRIBUTION
(See Approval Designator for required signatures)

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN
1/2	1	Design Authority WG Brown	W.G. Brown	3/6/98	T4-07
N/A	N/A	Design Agent N/A			
1/2	1	Proj. Startup EA Pacquet	3/6/98		R3-47
1/2	1	Proj. Mgr. GL Parsons	M Parsons	3/6/98	R3-47
1/2	1	QA LR Hall	K. Conrad/Telecon	3/6/98	R3-47
1/2	1	Safety OM Jaka	m O an Jaka	3/6/98	S5-12
N/A	N/A	Env. N/A			

(G) Reason	(H) Disp.	(J) Name	(K) Signature	(L) Date	(M) MSIN

18. Margo Ritz per
MD Gerken per eab 3/4/98
Signature of EDT Originator — Date

19. Margo Ritz per
EA Pacquet per eab 3/6/98
Authorized Representative for Receiving Organization — Date

20. Margo Ritz per
GL Parsons per 3/6/98
Design Authority/ Cognizant Manager — Date

21. DOE APPROVAL (if required) Ctrl. No.
[ ] Approved
[ ] Approved w/comments
[ ] Disapproved w/comments

BD-7400-172-2 (05/96) GEF097

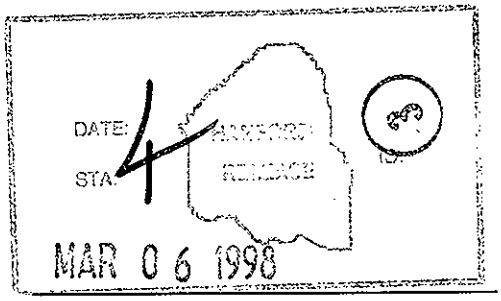
PREOPERATIONAL TEST POTP-008, MCS LOSS OF POWER AND REDUNDANT SUMP LEAK DETECTOR/PSH-3113 AND PSH-3113A INTERLOCK TEST

GL Parsons
Numatec Hanford Corporation, Richland, WA 99352
U.S. Department of Energy Contract DE-AC06-96RL13200

EDT/ECN: 623667 UC: 2030
Org Code: 8C610 Charge Code: N58U7
B&R Code: 39EW31301 Total Pages: 28

Key Words: Project W-058, Transfer header 3150, Transfer scheme, sump leak detectors, Monitor and Control System (MCS), PSH-3113, PSH-3113A

Abstract: This procedure describes the testing of safety class redundant sump leak detectors, pressure transmitters, and their associated interlocks. It also verifies the required response of the Monitoring Control System following a loss of power.



3/6/98
Release Approval Date
Release Stamp

Approved for Public Release

Author

M. D. Gerken/J. E. Dunks

APPROVAL DESIGNATOR SQ

PROCEDURE APPROVAL BY TEST REVIEW BOARD (TRB)

TRB Chair	3/6/98 Date	TWRS Operations	3/6/98 Date
TWRS Engineering	3/6/98 Date	TWRS Safety	3/6/98 Date
Startup Engineer	3/6/98 Date	Quality Assurance (K. Conrad for L. Hall/Telecon)	3-6-98 Date
Project Management	3-6-98 Date	FDNW Construction	3/6/98 Date

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1.0 PURPOSE

1.1 This procedure tests systems associated with W-058 Cross Site Transfer System.

2.0 INFORMATION

2.1 SCOPE

2.1.1 This procedure will test those systems/components associated with the W-058 Cross Site transfer system. Operation of the following components will be demonstrated:

- Solenoid operated valves and supernate header 3150 transfer scheme logic.
- Monitoring and Control System Operation during a power loss.
- Sump Leak Detectors LDE-3150, LDE-3151, LDE-3150A, LDE-3151A .
- Pressure switches PSH 3113 and PSH 3113A

2.1.2 This test will demonstrate the operation of system interlocks and controls both local and remote, associated with the above referenced safety class instruments.

2.1.3 This procedure is governed by HNF-PRO-446 which establishes the requirements for project, program, department, or division testing activities.

2.2 TERMS AND DEFINITIONS

2.2.1 PCU - Process Control Unit
2.2.2 HS - Hand Switch
2.2.3 MCS - Monitoring and Control Station
2.2.4 HV - Hand Valve
2.2.5 SOV - Solenoid Operated Valve
2.2.6 MOV - Motor Operated Valve

2.3 RESPONSIBILITIES

2.3.1 The Construction Forces craft personnel are responsible for:

- Providing assistance during the test.

2.3.2 Test Director responsibilities:

- Ensures the equipment found in Step 5.0 of this procedure is available.
- Safe and productive accomplishment of the tests necessary to achieve startup.

- Ensure safe working conditions and practices.
- Ensure compliance with test documents and Technical Safety Requirements documents (TSRs) during testing.
- Communicate and coordinate the tests with the Tank Farm Shift Managers.
- Ensure appropriate review/approval of any modifications to test procedures are completed prior to returning to work
- Direct line of communication and centralized point of control.
- Conducts pre-job planning meeting.
- Scheduling/rescheduling of the test as required.
- Delegates any of the above responsibilities as needed to a deputy.

2.3.3 Test Engineer responsibilities:

- Conducting pre-job system walkdown.
- Recording equipment status and data per this procedure.
- Directing preoperational testing
- Providing technical support during testing.
- Providing programming support during testing.
- Forcing data in PLC program during testing.
- Recording data exceptions and other notes as required on the POTP Data Sheets.
- Review test documents to validate acceptance
- Prepare post testing documents

2.3.4 Operations Personnel responsibilities:

- Observing testing activities for training purposes.

2.4 CHANGE CONTROL

2.4.1 Test procedure administrative or editorial changes required during testing may be accommodated either as exceptions or by the Test Engineer red-lining the controlled copy of the test procedure, if such changes will not affect operating facility safety, function, or performance and will not compromise or influence test data. Requirement changes, changes to acceptance criteria, or changes to Danger, Caution, Special Precautions, or other safety or environmental instructions in test procedures prepared as supporting documents must be made by engineering change notice.

2.5 EXCEPTIONS

2.5.1 Exceptions to results or to the test procedure will be given a sequential number and recorded on Attachment E, Test Exception Log sheet. A Test Exception Report, Attachment D, will be filled out to record and disposition each test exception.

2.6 REFERENCES

2.6.1 The following documents were used to write or are referenced in this procedure:

- Project W-058 Startup Test Plan, WHC-SD-W058-SUP-002
- H-2-822400, Sheet 1, P&ID Legend
- H-2-822403, P&ID Diversion Box 6241-A
- H-2-822404, P&ID Vent Station 6241-V
- H-2-822405, P&ID Lift Station 244-A
- H-2-822505, Electrical One-Line Diversion Box 6241-A
- H-2-822513, Sheet 1-9, Electrical Elementary Diagrams Diversion Box 6241-A
- H-6-14009, Electrical One Line Diagram Ventilation Station 6241-V
- ES-058-Y40 through Y90, Logic Diagrams
- VI 22798, Supplement 1, Electronic Pressure Transmitter, Ametek Model 88 Series
- VI 22798, Supplement 33, Air Operated Ball Valves, Herion/Hi-Gear Inc./Hytork
- HNF-1921, Pre-Operational Test Report, Transfer Header 3150
- W-058 Monitor and Control System Alarm/Shutdown Setpoints, HNF-1995
- Engineering Change Notice W-058-374
- Engineering Change Notice W-058-379
- Engineering Change Notice, W-058-381

2.7 ENVIRONMENTAL

2.7.1 Spills of hazardous materials should be reported to Environmental Reports group at 373-4942.

2.8 SAFETY

Warning - Operators should be aware of the possibility of coming into contact with poisonous snakes and spiders.

2.8.1 The following administrative procedures control work performed in this procedure:

- Safety: HNF-PRO-074 thru -096 and HNF-PRO-100 thru -105.

- Industrial Hygiene: HNF-PRO-110, -111, -115, -119 thru -121.
- Tank Farm Health and Safety Plan (HASP), WHC-SD-WM-HSP-002

2.9 RADIATION AND CONTAMINATION CONTROL

2.9.1 For any work requiring entry into a radiation/ contamination area, comply with the facility and the Hanford Site Radiological Requirements (HSRCM-1). The majority of the work covered by this procedure is performed outside of the tank farm and does not require entry into a radiation/contamination control area.

2.10 QUALITY ASSURANCE

2.10.1 No Quality Assurance witness or hold points are required in this procedure. Quality Assurance shall review and approve the test procedure, the final test report and the disposition of all test exceptions. LHMC QC will witness test performed under this POTP.

2.11 GENERAL INFORMATION

2.11.1 All Measuring and Test Equipment (M&TE) used during performance of this procedure to collect qualitative data with the exception of timing devices shall meet the following requirements:

- Be within its current calibration cycle as evidenced by an affixed calibration label.
- Be capable of desired range.
- Have an accuracy (consistent with state-of-the-art limitations) equal to or greater than the accuracy specified in the procedure.

2.11.2 Timing measurements shall be made with commercially available time devices.

2.11.3 All readings are to be taken and recorded for each location where the capability exists (i.e. local instrument, PCU, MCS).

2.12 LIMITS AND PRECAUTIONS

2.12.1 If during performance of this procedure, any of the following conditions are found, **immediately** notify the Test Engineer:

- Any equipment malfunction which could prevent fulfillment of it's functional requirements.
- Personnel error or procedural inadequacy which could prevent fulfillment of procedural requirements.

The Test Engineer may choose to stop work and place equipment in a safe condition based on the significance of the malfunction, error or inadequacy.

2.12.2 The Test Engineer has overall control of the testing process and change authorization for this procedure. The Test Engineer is responsible for running the test, data collection, and ensuring compliance with all requirements in this procedure.

2.12.3 Contact Test Director for additional instructions if changing plant conditions affect work or delays in work extend past end of shift.

2.12.4 If any waste is generated during performance of this instruction consult Facility/Plant/Area Hazardous Waste Coordinator for specific instructions to ensure compliance with HNF and DOE environmental standards, as applicable, for disposal.

2.12.5 Comply with FDNW and plant/facility specific lock and tag or over-tagging requirements, as applicable.

3.0 RECORDS

3.1 This procedure as well as all completed attachments/appendices are kept as a permanent record.

4.0 PREREQUISITES

Unless otherwise specified, prerequisite actions may be performed in any order.

4.1 Perform a walkdown of the system tested by this procedure.
Test Engineer/Date: _____

4.2 Perform a pretest briefing for all personnel involved in the performance of this test.
Test Director/Date: _____

4.3 All personnel who will be involved with this test have provided the required signature verification information in Attachment B.
Test Engineer/Date: _____

4.4 Communications between personnel in 242-S and field test personnel has been verified.
Test Director/Date: _____

4.5 The official copy of this POTP and all other copies that will be used during the test have been verified to be the latest revision.
Test Director/Date: _____

4.6 All open items have been evaluated and verified to not affect the performance of this POTP (Quality Assurance Nonconformance Reports, Construction Punch Lists, outstanding Engineering or Field Change Notices, Startup-originated Design Change Requests, Test Deficiency Reports, and Master System Punch List items).

Test Director/Date: _____

5.0 EQUIPMENT/INSTRUMENTS

5.1 Multi-meter: _____
Manufacturer: _____ Model No.: _____
Serial No.: _____ Calibration Date: _____
Calibration Due Date: _____

5.2 Process Instrument Calibrator (PIC): Output 4-20mA, Input 4-20mA, accuracy ±0.01mA. (2 required)
Manufacturer: _____ Model No.: _____
Serial No.: _____ Calibration Date: _____
Calibration Due Date: _____

Manufacturer: _____ Model No.: _____
Serial No.: _____ Calibration Date: _____
Calibration Due Date: _____

6.0 PROCEDURE

6.1 Preoperational testing shall be performed using Attachment A of this procedure.

7.0 ACCEPTANCE CRITERIA

7.1 Transfer Scheme 1 for Transfer Header 3150 lines up valves to the proper positions.

Test Engineer/Date: _____

Quality Control/Date: _____

7.2 Transfer Scheme 3 for Transfer Header 3150 lines up valves to the proper positions.

Test Engineer/Date: _____

Quality Control/Date: _____

7.3 MCS (OCS/PCU) responds properly to loss of power/communication test.

Test Engineer/Date: _____

Quality Control/Date: _____

7.4 The following interlocks operate properly:

- I-1 (with respect to Div Box and Vent Station leak detectors only): If a leak is detected shutdown booster pump P-3125A or P-3125B, transfer pump 241-SY-02A and input signal to 200 West Master Pump Circuit.
- I-11 (with respect to Div Box and Vent Station leak detectors only): on leak detection, shutdown booster pump P-3125A and P-3125B.
- I-12 (with respect to Div Box and Vent Station leak detectors only): on leak detection, shudown transfer pump P-102-SY-02A.
- I-13 (with respect to Div Box and Vent Station leak detectors only): input signal to 200 East and 200 West Master Pump Shutdown circuits.

Test Engineer/Date: _____

Quality Control/Date: _____

7.5 The following interlocks operate properly:

- I-16 (with respect to PSH-3113 & PSH-3113A): On High pressure, input signal to 200 West Master Pump Circuit.

Test Engineer/Date: _____

Quality Control/Date: _____

1.0 Initial Conditions

1.1 **VERIFY** system electrical circuit breakers are aligned in accordance with Appendix B.

Test Engineer/Date: _____

1.2 **VERIFY** the Diversion Box Instrument Air system and the Vent Station Instrument Air system are in service.

Test Engineer/Date: _____

1.3 **OPEN** Transfer Pump 241-SY-02A Main Disconnect

Test Engineer/Date: _____

1.4 **LOCK & TAG** Transfer Pump 241-SY-02A Main Disconnect

Test Engineer/Date: _____

1.5 **DISCONNECT** Transfer Pump 241-SY-02A motor terminal leads from starter.

Test Engineer/Date: _____

1.6 **TAPE** up motor leads.

Test Engineer/Date: _____

1.7 **REMOVE** Lock & Tag from Transfer Pump 241-SY-02A Main Disconnect.

Test Engineer/Date: _____

1.8 **CLOSE** Transfer Pump 241-SY-02A Main Disconnect

Test Engineer/Date: _____

NOTE: The pipe jumpers fabricated for the W-058 Project for the 244A pit are not yet installed. Therefore, it is necessary to simulate the positions of the motor operated valves on the 244A jumpers for the Transfer Scheme tests. The SOV's are closed in the field for POTP-007 testing boundaries and must be forced to the open position to perform the testing specified in POTP-008.

1.9 **FORCE** (in the MCS software) the associated bytes for the following valves to the positions shown.

Valve No.	Description	Required Position	Initials
MOV-843	WT-SNL-3150 Motor Operated 3-Way Valve at 244A Lift Station	Position A	
MOV-846	WT-SNL-3150 Motor Operated Valve at 244A Lift Station	OPEN	
SOV-3182A	WT-SNL-3150 Solenoid Operated Valve at Diversion Box	OPEN	
SOV-3182B	WT-SNL-3150 Solenoid Operated Valve at Diversion Box	OPEN	
SOV-3166A	WT-SNL-3150 Solenoid Operated Valve at Vent Station	OPEN	

1.10 **FORCE** LIT-WST-3102 on.

Test Engineer/Date: _____

1.11 **VERIFY** the following on the MCS:

1.11.1 P-102-SY-02A Transfer Pump **STOPPED** is illuminated on the display for Transfer Pump.

Test Engineer/Date: _____

1.11.2 PAL-3100A COMPRESSOR PRESSURE LOW is illuminated in **GREEN** on the display for Diversion Box 6241-A.

Test Engineer/Date: _____

1.11.3 PAL-3100B COMPRESSOR PRESSURE LOW is illuminated in **GREEN** on the display for Vent Station 6241-V.

Test Engineer/Date: _____

1.11.4 LDA-3160 ENCASEMENT LEAK DETECTION is illuminated in **GREEN**

on the display for Diversion Box 6241-A.

Test Engineer/Date: _____

1.11.5 LDA-3150 SUMP LEAK DETECTION is illuminated in **GREEN** on the display for Diversion Box 6241-A.

Test Engineer/Date: _____

1.11.6 LDA-3161 ENCASEMENT LEAK DETECTION is illuminated in **GREEN** on the display for Vent Station 6241-V.

Test Engineer/Date: _____

1.11.7 LDA-3151 SUMP LEAK DETECTION is illuminated in **GREEN** on the display for Vent Station 6241-V.

Test Engineer/Date: _____

1.11.8 LDA-3162 ENCASEMENT LEAK DETECTION is illuminated in **GREEN** on the display for 244A Lift Station.

Test Engineer/Date: _____

1.11.9 Pump P-841 Status **OFF** is illuminated on the display for 244A Lift Station.

Test Engineer/Date: _____

2.0 Transfer Scheme 1 Testing

Transfer Scheme 1 sets up for transfer of supernate from the 241-SY-A valve pit to the 241-A-B valve pit.

2.1 **SELECT** the Transfer Sequencing **RESET** button.

Test Engineer/Date: _____

2.2 **VERIFY** Alarm Table on MCS shows no valve positioning failures.

Test Engineer/Date: _____

NOTE: On MCS, valve position is given by color and fill of valve on computer screen. White designates CLOSED; Green designates OPEN, Red designates FAILED.

2.3 **VERIFY** all valves given on Appendix C-1 Data Sheet are shown **CLOSED** on the MCS.

Test Engineer/Date: _____

NOTE: Local indication (OPEN/CLOSED)is given by valve cap position indicator on SOVs. For MOVs, indicator is on bottom of actuator.

2.4 **VERIFY** all valves given on Appendix C-1 Data Sheet indicate **CLOSED** per local inspection.

Test Engineer/Date: _____

2.5 **SELECT** the Transfer Sequencing Initiate Button.
Test Engineer/Date: _____

2.6 **SELECT** the Transfer Sequencing **TYPE 1** transfer button.
Test Engineer/Date: _____

2.7 **VERIFY** proper valve position in accordance with Appendix C-1 Data Sheet:
Test Engineer/Date: _____

NOTE: The boxes on the MCS overview screen that denote PCU-1 thru PCU-5 indicate status of the transfer path. All boxes GRAY and paths GREEN indicate that the transfer path is ready for use. Boxes filled in RED indicates that an alarm associated with the transfer is activated (i.e., mispositioned valve, leak detected, etc.).

2.8 **IF** any the boxes on the MCS overview screen which denote PCU-1 thru PCU-5 are highlighted in RED, determine the reason why and record in the test log or a Test Exception Sheet if applicable. Otherwise N/A this step.
Test Engineer/Date: _____

2.9 **VERIFY** the boxes on the MCS overview screen which denote PCU-1 thru PCU-5 are highlighted in GRAY, unless a RED box has been determined to be acceptable per the previous step.
Test Engineer/Date: _____

2.10 **BYPASS** 102-SY-02A Transfer Pump Limit Alarm Module at 241-SY-271.

2.11 **START** 102-SY-02A Transfer Pump from the PCU-1 screen on MCS.

2.12 **VERIFY** that starter contacts close.
Test Engineer/Date: _____

2.13 **VERIFY** 102-SY-02A Transfer Pump **ACTIVE** box is illuminated on MCS screen.
Test Engineer/Date: _____

2.14 **SIMULATE** leak at Sump Leak Detector LDE-3150 (immerse leak detector in water).
Test Engineer/Date: _____

2.15 **VERIFY** LDA-3150 Sump Leak Detection is illuminated in RED at the MCS on the PCU-2 screen.
Test Engineer/Date: _____

2.16 **VERIFY** the PCU-2 box on the System Overview Diagram screen is illuminated in RED.
Test Engineer/Date: _____

2.17 **VERIFY** that Transfer Pump 102-SY-02A starter contacts open.
Test Engineer/Date: _____

2.18 **VERIFY** that PCU-1 outputs 7/3 and 7/4 are ON. (**IL-1**)
Test Engineer/Date: _____

2.19 **VERIFY** 102-SY-02A Transfer Pump **STOP** box is illuminated on MCS screen.
Test Engineer/Date: _____

2.20 **VERIFY** at 241-SY-271 in TBX-1A, loss of continuity between terminals TB-1B-13 and TB-1A-5 and loss of continuity between TB-1B-12 and TB-1A-7. (**IL-12**)
Test Engineer/Date: _____

2.21 **VERIFY** the contacts of the master shut down relay are opened at 241-SY-271 in TBX-1A, terminal strip TB-1B between points 10 and 11. (**IL-13**)
Test Engineer/Date: _____

2.22 **VERIFY** contact K-DB-3 between points TB6-17 and TB6-18 located in VSD-1 cabinet open. (**IL-11**)
Test Engineer/Date: _____

2.23 **VERIFY** contact K-DB-3 between points TB6-17 and TB6-18 located in VSD-2 cabinet open. (**IL-11**)
Test Engineer/Date: _____

2.24 **START** 102-SY-02A Transfer Pump from the PCU-1 screen on MCS.

2.25 **VERIFY** that starter contacts close.
Test Engineer/Date: _____

2.26 **VERIFY** 102-SY-02A Transfer Pump **ACTIVE** box is illuminated on MCS screen.
Test Engineer/Date: _____

2.27 **SIMULATE** leak at Sump Leak Detector LDE-3150A (immerse leak detector in water).
Test Engineer/Date: _____

2.28 **VERIFY** LDA-3150A Sump Leak Detection is illuminated in RED at the MCS on the PCU-2 screen.
Test Engineer/Date: _____

2.29 **VERIFY** the PCU-2 box on the System Overview Diagram screen is illuminated in RED.
Test Engineer/Date: _____

2.30 **VERIFY** that Transfer Pump 102-SY-02A starter contacts open.
Test Engineer/Date: _____

2.31 **VERIFY** that PCU-1 outputs 7/3 and 7/4 are ON. (**IL-1**)
Test Engineer/Date: _____

2.32 **VERIFY** 102-SY-02A Transfer Pump **STOP** box is illuminated on MCS screen.
Test Engineer/Date: _____

2.32.1 **VERIFY** at 241-SY-271 in TBX-1A, loss of continuity between terminals TB-1B-13 and TB-1A-5 and loss of continuity between TB-1B-12 and TB-1A-7. (**IL-12**)
Test Engineer/Date: _____

2.33 **VERIFY** the contacts of the master shut down relay are opened at 241-SY-271 in TBX-1A, terminal strip TB-1B between points 10 and 11. (**IL-13**)
Test Engineer/Date: _____

2.34 **VERIFY** contact K-DB-3A between points TB6-17 and TB6-18 located in VSD-1 cabinet open. (**IL-11**)
Test Engineer/Date: _____

2.35 **VERIFY** contact K-DB-3A between points TB6-17 and TB6-18 located in VSD-2 cabinet open. (**IL-11**)
Test Engineer/Date: _____

2.36 **RESET** leak detector shutdown at MCS.
Test Engineer/Date: _____

2.37 **START** 102-SY-02A Transfer Pump from the PCU-1 screen on MCS.

2.38 **VERIFY** that starter contacts close.
Test Engineer/Date: _____

2.39 **VERIFY** 102-SY-02A Transfer Pump **ACTIVE** box is illuminated on MCS screen.
Test Engineer/Date: _____

2.40 **SIMULATE** leak at Sump Leak Detector LDE-3151 (immerse leak detector in water).
Test Engineer/Date: _____

2.41 **VERIFY** LDA-3151 Sump Leak Detection is illuminated in RED at the MCS on the PCU-2 screen.
Test Engineer/Date: _____

2.42 **VERIFY** the PCU-2 box on the System Overview Diagram screen is illuminated in RED.

Test Engineer/Date: _____

2.43 **VERIFY** that Transfer Pump 102-SY-02A starter contacts open.

Test Engineer/Date: _____

2.44 **VERIFY** that PCU-1 outputs 7/3 and 7/4 are ON. (**IL-1**)

Test Engineer/Date: _____

2.45 **VERIFY** 102-SY-02A Transfer Pump **STOP** box is illuminated on MCS screen.

Test Engineer/Date: _____

2.46 **VERIFY** at 241-SY-271 in TBX-1A, loss of continuity between terminals TB-1B-13 and TB-1A-5 and loss of continuity between TB-1B-12 and TB-1A-7. (**IL-12**)

Test Engineer/Date: _____

2.47 **VERIFY** the contacts of the master shut down relay are opened at 241-SY-271 in TBX-1A, terminal strip TB-1B between points 8 and 9. (**IL-13**)

Test Engineer/Date: _____

2.48 **VERIFY** contact K-VS-3 between points TB6-17 and TB6-18 located in VSD-1 cabinet open. (**IL-11**)

Test Engineer/Date: _____

2.49 **VERIFY** contact K-VS-3 between points TB6-17 and TB6-18 located in VSD-2 cabinet open. (**IL-11**)

Test Engineer/Date: _____

2.50 **RESET** leak detector shutdown at MCS.

Test Engineer/Date: _____

2.51 **START** 102-SY-02A Transfer Pump from the PCU-1 screen on MCS.

2.52 **VERIFY** that starter contacts close.

Test Engineer/Date: _____

2.53 **VERIFY** 102-SY-02A Transfer Pump **ACTIVE** box is illuminated on MCS screen.

Test Engineer/Date: _____

2.54 **SIMULATE** leak at Sump Leak Detector LDE-3151A (immerse leak detector in water).

Test Engineer/Date: _____

2.55 **VERIFY** LDA-3151A Sump Leak Detection is illuminated in RED at the MCS on the PCU-2 screen.

Test Engineer/Date: _____

2.56 **VERIFY** the PCU-2 box on the System Overview Diagram screen is illuminated in RED.

Test Engineer/Date: _____

2.57 **VERIFY** that Transfer Pump 102-SY-02A starter contacts open.

Test Engineer/Date: _____

2.58 **VERIFY** that PCU-1 outputs 7/3 and 7/4 are ON. (**IL-1**)

Test Engineer/Date: _____

2.59 **VERIFY** 102-SY-02A Transfer Pump **STOP** box is illuminated on MCS screen.

Test Engineer/Date: _____

2.60 **VERIFY** at 241-SY-271 in TBX-1A, loss of continuity between terminals TB-1B-13 and TB-1A-5 and loss of continuity between TB-1B-12 and TB-1A-7. (**IL-12**)

Test Engineer/Date: _____

2.61 **VERIFY** the contacts of the master shutdown relay are opened at 241-SY-271 in TBX-1A, terminal strip TB-1B between points 8 and 9. (**IL-13**)

Test Engineer/Date: _____

2.62 **VERIFY** contact K-VS-3A between points TB6-17 and TB6-18 located in VSD-1 cabinet open. (**IL-11**)

Test Engineer/Date: _____

2.63 **VERIFY** contact K-VS-3A between points TB6-17 and TB6-18 located in VSD-2 cabinet open. (**IL-11**)

Test Engineer/Date: _____

2.64 **RESET** leak detector shutdown at MCS.

Test Engineer/Date: _____

2.65 **SIMULATE** Operating Pressure at PT-3113 at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-1 and TB2-2 to 4.0mA.

Test Engineer/Date: _____

2.66 **VERIFY** the contacts of PT-3113 are Closed at 241-SY-271 in TBX-1B, terminal strip TB-1D between points 10 and 11. (**IL-16**)

2.67 **SIMULATE** High Pressure at PT-3113 at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-1 and TB2-2 to 4.5mA. (Equivalent to 10 psig)

Test Engineer/Date: _____

2.68 **VERIFY** the contacts of PT-3113 are open at 241-SY-271 in TBX-1B, terminal strip TB-1D between points 10 and 11. (**IL-16**)

Test Engineer/Date: _____

2.69 **DISCONNECT** PIC from PT-3113.

Test Engineer/Date: _____

2.70 **SIMULATE** Operating Pressure at PT-3113A at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-1 and TB2-2 to 4.0mA.

Test Engineer/Date: _____

2.71 **VERIFY** the contacts of PT-3113A are Closed at 241-SY-271 in TBX-1B, terminal strip TB-1D between points 7 and 8. (**IL-16**)

2.72 **SIMULATE** High Pressure at PT-3113A at 241-SY-A Valve Pit JB-1. **SET** PIC connected to points TB2-1 and TB2-2 to 4.5mA. (Equivalent to 10 psig)

Test Engineer/Date: _____

2.73 **VERIFY** the contacts of PT-3113A are open at 241-SY-271 in TBX-1B, terminal strip TB-1D between points 7 and 8. (**IL-16**)

Test Engineer/Date: _____

2.74 **DISCONNECT** PIC from PT-3113A.

Test Engineer/Date: _____

2.75 **OPEN** Transfer Pump 241-SY-02A Main Disconnect

Test Engineer/Date: _____

3.0 Transfer Scheme 3 Testing

Transfer Scheme 3 sets up for transfer of supernate from the 241-A-B valve pit to valve pit 241-SY-A

3.1 **SELECT** the Transfer Sequencing **TYPE 3** transfer button.

Test Engineer/Date: _____

3.2 **SELECT** the Transfer Sequencing **RESET** button.

Test Engineer/Date: _____

3.3 **VERIFY** Alarm Table on MCS shows no valve positioning failures.

Test Engineer/Date: _____

NOTE: On MCS, valve position is given by color and fill of valve on computer screen. White designates CLOSED; Green designates OPEN, Red designates FAILED.

3.4 **VERIFY** all valves given on Appendix C-2 Data Sheet are shown **CLOSED** on the MCS.

Test Engineer/Date: _____

NOTE: Local indication (OPEN/CLOSED)is given by valve cap position indicator on SOVs. For MOVs, indicator is on bottom of actuator.

3.5 **VERIFY** all valves given on Appendix C-2 Data Sheet indicate **CLOSED** per local inspection.

Test Engineer/Date: _____

3.6 **SELECT** the Transfer Sequencing Initiate Button.

3.7 **VERIFY** proper valve position in accordance with Appendix C-2 Data Sheet:

Test Engineer/Date: _____

4.0 Operator Control Station Loss of Power Test

This section is intended to verify that the UPS provided for the Operator Control Station (OCS) is capable of providing a minimum of one hour (60 minutes) of power to the system.

4.1 **SELECT** different monitoring screens on each of the display terminals and disconnect the power cord to the OCS. **RECORD** the starting time and UPS voltage _____

Test Engineer/Date: _____

4.2 **SELECT** alternate viewing screens and monitoring functions during the test to simulate the activity that might occur during a localized power interruption during a transfer.

Test Engineer/Date: _____

4.3 At the completion of one hour, **VERIFY** that the OCS is still operating and that the UPS is still providing adequate power. **RECORD** completion time and UPS voltage_____

Test Engineer/Date: _____

4.4 Reconnect power to OCS and **VERIFY** that the system is operational.

Test Engineer/Date: _____

5.0 Operator Control Station/ Process Control Unit Loss of Power/Communication Test

This section is intended to verify that the OCS is capable of displaying in a trend the last status of specified parameters after a PCU loss of power/communications.

5.1 **ACTIVATE** the trend.

Test Engineer/Date: _____

5.2 **RECORD** status of trended parameters on test log.

Test Engineer/Date: _____

5.3 **DISCONNECT** power to PCU-1.

Test Engineer/Date: _____

5.4 **VERIFY** trend shows last recorded status.

Test Engineer/Date: _____

5.5 Reconnect power to PCU-1 and **VERIFY** that the system is operational.

Test Engineer/Date: _____

APPENDIX B - Electrical Alignment			
BREAKER NUMBER	**BREAKER NAME AND LOCATION**	**REQUIRED POSITION**	**INITIALS**
CB2-10	Diversion Box Panelboard PP-3 supply breaker in Switchboard SB-1	CLOSED	
CB2-5	Diversion Box Air Compressor supply breaker in Switchboard SB-1	CLOSED	
CB-2	Vent Station Panelboard PP-3 supply breaker in Distribution Panelboard DP-1	CLOSED	
CB-3	Vent Station Air Compressor supply breaker in Distribution Panelboard DP-1	CLOSED	
CB1-3	Diversion Box Switchboard breaker in SB-1 for VSD-1.	OPEN	
CB1-2	Diversion Box Switchboard breaker in SB-1 for VSD-2.	OPEN	

Performed by: _____ _____ _____
PRINT NAME INITIALS DATE

Verified by: _____ _____ _____
PRINT NAME INITIALS DATE

APPENDIX C-1 Data Sheet - Transfer Scheme 1							
		Transfer Sequence Reset Position			Transfer 1 Position		
Valve	Description / Location	Req. Position	Verif. From MCS	Verif. Local	Req. Position	Verif. From MCS	Verif. Local
SOV-3182A	SNL-3150 DIV BOX	CLOSED			CLOSED-(FORCED OPEN)		
SOV-3182B	SNL-3150 DIV BOX	CLOSED			CLOSED-(FORCED OPEN)		
SOV-3184	SNL-3150 DIV BOX	CLOSED			OPEN		
SOV-3173A	SNL-3151 DIV BOX	CLOSED			CLOSED		
SOV-3173B	SNL-3151 DIV BOX	CLOSED			CLOSED		
SOV-3165A	SNL-3150 VENT STA	CLOSED			OPEN		
SOV-3166A	SNL-3150 VENT STA	CLOSED			CLOSED-(FORCED OPEN)		
SOV-3185A	SNL-3152 VENT STA	CLOSED			CLOSED		
SOV-3185B	SNL-3152 VENT STA	CLOSED			CLOSED		
SOV-3167A	SNL-3153 VENT STA	CLOSED			CLOSED		
SOV-3167B	SNL-3153 VENT STA	CLOSED			CLOSED		

APPENDIX C-2 Data Sheet - Transfer Scheme 3							
		Transfer Sequence Reset Position			Transfer 3 Position		
Valve	Description / Location	Req. Position	Verif. From MCS	Verif. Local	Req. Position	Verif. From MCS	Verif. Local
SOV-3182A	SNL-3150 DIV BOX	CLOSED			CLOSED-(FORCED OPEN)		
SOV-3182B	SNL-3150 DIV BOX	CLOSED			CLOSED-(FORCED OPEN)		
SOV-3184	SNL-3150 DIV BOX	CLOSED			OPEN		
SOV-3173A	SNL-3151 DIV BOX	CLOSED			CLOSED		
SOV-3173B	SNL-3151 DIV BOX	CLOSED			CLOSED		
SOV-3165A	SNL-3150 VENT STA	CLOSED			OPEN		
SOV-3166A	SNL-3150 VENT STA	CLOSED			CLOSED-(FORCED OPEN)		
SOV-3185A	SNL-3152 VENT STA	CLOSED			CLOSED		
SOV-3185B	SNL-3152 VENT STA	CLOSED			CLOSED		
SOV-3167A	SNL-3153 VENT STA	CLOSED			CLOSED		
SOV-3167B	SNL-3153 VENT STA	CLOSED			CLOSED		

SIGNATURE/INITIAL VERIFICATION

All persons involved in procedure performance, data recording, and verification or evaluation of test steps shall provide their name, job title, signature, and initials in the following table.

NAME (PRINT)	TITLE	SIGNATURE	INITIAL

TEST LOG	TEST NUMBER:	TEST LOG PAGE NUMBER: ___ of ___
TEST TITLE:		

TIME/DATE	EVENT DESCRIPTION/SIGNATURE

TEST EXCEPTION REPORT

TEST PROCEDURE NO. & SECTION:	TEST NAME:	T.E. NUMBER:

DESCRIPTION OF PROBLEM:

ORIGINATOR:

ORG: DATE:

IMPACT ON TESTING: ☐ HOLD FOR RESOLUTION ☐ CONTINUE

TEST ENGINEER DATE

DISPOSITION:

DISPOSITION AND RETEST REQUIREMENTS BY:

DATE

DISPOSITION ACTIONS COMPLETE:

Verified

DATE

QAE CONCURRENCE WITH DISPOSITION (if required):

DATE

RETEST COMPLETE:

TEST ENGINEER DATE

TEST EXCEPTION LOG

TE #	DATE	DESCRIPTION	DISPOSITIONED	DATE CLOSED

DISTRIBUTION SHEET

To	From	Page 1 of 1
Distribution	E.A. Pacquet - W-058 Testing	Date 03/06/98
Project Title/Work Order		EDT No. 623667
Replacement Cross-Site Tranfer System		ECN No. N/A

Name	MSIN	Text With All Attach.	Text Only	Attach./ Appendix Only	EDT/ECN Only
R.J. Brown, LMHC	T4-08	X			
W.G. Brown, LMHC	T4-07	X			
J.E. Dunks, FDNW	R3-47	X			
L.R. Hall, FDNW	R3-47	X			
B.J. Harp, DOE-RL	S7-54	X			
D.A. Greenaway, LMHC	T4-09	X			
J.L. Henderson, FDNW	G3-14	X			
O.M. Jaka, LMHC	S5-12	X			
R.L. Legg, LMHC	R2-50	X			
D.R. Nunamaker, LMHC	T4-07	X			
E.A. Pacquet, NHC	R3-47*	X			
G.L. Parsons, NHC	R3-47*	X			
C.R. Reichmuth, LMHC	T4-07*	X			
M.J. Sutey, LMHC	T4-08	X			
C. van Katwijk, NHC	R3-47	X			
M.D. Gerken, NHC	R3-47*	X			
D.O. Dobson, LMHC	R2-50	X			
M.J. Bailey, LMHC	T4-07	X			
Project Files	R1-29	X			

* Advance Copy